

REMARKS

Claims 1-60 were pending. Claims 10, 18, 19, and 30 have been canceled. Claims 1, 11-15, 17, and 52 have been amended. Claims 1-9, 11-17, 20-29, and 31-60 are pending.

Claims 1-4, 6, 10, 12, 18, 28, 30-31, and 52-54 stand rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Pat. No. 6,130,448 to Bauer et al. Applicant traverses this rejection.

Claim 1 recites a cover for an image sensor array. The cover includes "a plate formed of substantially transparent material and secured adjacent to an upper surface of and covering the image sensor array, said sensor array being sealed by said plate." The plate has "a plurality of surfaces forming a lensing structure, such that at least one of said plurality of surfaces is contoured into a lensing surface capable of changing imaging characteristics." A mounting structure extends "from an upper surface of the plate" and is "adapted to secure a prefabricated lens system to the plate above the lensing structure."

The reference to Bauer et al. discloses an imager with a lensing window 54. Window 54 can be an assembly of "multiple lenses of differing materials." The Bauer et al. reference does not teach or suggest a plate having "a plurality of surfaces forming a lensing structure," "at least one of said plurality of surfaces is contoured into a lensing surface," *and* "a mounting structure extending from an upper surface of the plate and adapted to secure a prefabricated lens system to the plate above the lensing structure." The reference to Bauer et al. does not anticipate or render obvious the invention as recited in claim 1. Claim 1 and its dependent claims 2-4, 6, and 12 are patentable over the cited reference to Bauer et al.

Claim 28 recites a method of making an image sensor array having a lensing cover plate. The method includes “forming a lensing structure on a lensing surface of a flat, substantially transparent cover plate by contouring said lensing surface of the cover plate into a lensing element to form said lensing cover plate,” and “securing a mounting structure to an upper surface of the plate, said mounting structure being adapted to connect a prefabricated lens system to the plate above the lensing structure.” An image sensor array is covered “with said lensing cover plate such that said image sensor array is sealed by said cover plate.”

The Bauer et al. reference discloses forming a window 54 as a lens. Window 54 can be formed as a plate with an assembly of “multiple lenses of differing materials.” Whereas the reference to Bauer et al. teaches “forming a lensing structure on a lensing surface of a flat, substantially transparent cover plate,” it provides no teaching or suggestion of “securing a mounting structure to an upper surface of the plate, said mounting structure being adapted to connect a prefabricated lens system to the plate above the lensing structure.” The reference to Bauer et al. does not anticipate the present invention as recited in claim 28. Claim 28 and its dependent claims 30-31 are patentable over the cited reference to Bauer et al.

Claim 52 recites a method of making a camera system that includes “contouring a portion of a flat cover plate to form a cover plate having a lensing structure,” and “securing a mounting structure to an upper surface of the plate, said mounting structure being adapted to connect a prefabricated lens system to the plate mounting above the lensing structure.” The method further includes “covering an imaging array with said cover plate, said cover plate being placed in an optical path of said camera system,” and “bonding the cover plate to an assembly to seal the imaging array.”

The reference to Bauer et al. discloses a method of forming a window as a lens, as noted above in connection with claim 28. The Bauer et al. reference does not teach or suggest, however, "securing a mounting structure to an upper surface of the plate, said mounting structure being adapted to connect a prefabricated lens system to the plate mounting above the lensing structure." Claim 52 and its dependent claims 53 and 54 are patentable over the cited reference to Bauer et al.

Claims 5, 11, 13, and 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bauer et al. in view of U.S. Pat. No. 5,400,072 to Izumi et al. This rejection is traversed.

Claims 5, 11, 13, and 19 depend from claim 1, which is not anticipated or rendered obvious by the reference to Bauer et al. The Izumi et al. reference does not cure the deficiencies of the Bauer et al. reference. The reference to Izumi et al. discloses an airtight lens structure. The airtight lens structure includes a base secured *behind* the imager array, and a separate lens holder. The distance between the base and the lens holder is variable so that the back focus of the lens on the imager array can be adjusted during assembly. Once the back focus is adjusted, the base and the lens holder are melt-bonded together. See col. 24, lines 36 *et seq.* Izumi et al. does not teach or suggest "a plate formed of substantially transparent material and secured adjacent to an upper surface of and covering the image sensor array, said sensor array being sealed by said plate, said plate having a plurality of surfaces forming a lensing structure." Further, the Izumi et al. reference does not provide or suggest the teaching missing from the Bauer et al. reference of "a mounting structure extending from an upper surface of the plate and adapted to secure a prefabricated lens system to the plate above the lensing structure."

In addition, the combination proposed in the Office action would require that the device disclosed by the Bauer et al. reference, which has a fixed window formed into a lens over the imaging array, be modified using the disclosure of the Izumi et al. reference, which has a movable lens holder adjustably supported by a base attached to the back of the imaging array. No motivation exists to make the modification necessary to obtain the invention recited in claim 1 of the present application absent an improper hindsight attempt at reconstruction. More specifically, Applicant notes that Izumi et al. does not teach a cover plate at all. Instead, the imager array disclosed in the reference to Izumi et al. is sealed in an airtight housing formed by the base and the lens holder. Given that the imager array is already protected by an airtight seal, the reference to Izumi et al. teaches away from the use of a cover plate over the imager array. Further, the Izumi et al. reference discloses that the lens holder is secured to the base, and the base is located behind the lens array and supports the lens array. Consequently, the reference to Izumi et al. offers no motivation for modifying the device disclosed by the Bauer et al. reference to provide "a mounting structure extending from an upper surface of the plate and adapted to secure a prefabricated lens system to the plate above the lensing structure."

Moreover, the proposed combination of the references to Bauer et al. and Izumi et al. would not result in the invention as recited in claim 1, absent improperly adding structure not disclosed in the prior art, and improperly selecting only isolated teachings from each of the references. More specifically, in order to arrive at the invention recited in claim 1 using the proposed combination, a mounting structure not disclosed in either of the cited references would have to be attached to the window disclosed in the reference to Bauer et al. In addition, the adjustable-focus lens holder disclosed in Izumi et al. would have to be detached from the base used to adjust the back focus, a fundamental feature of the Izumi et al. disclosure, and be fixed to the

undisclosed mounting structure provided unadjustably on the window of the Bauer et al. reference in front of the imager array. No motivation exists in the cited prior art for these modifications. Absent the teaching of a mounting structure, and absent the motivation to include the mounting structure in the proposed combination, a *prima facie* obviousness rejection has not been established. Claims 5, 11, 13, and 19 are patentable over the cited references to Bauer et al. and Izumi et al.

Claims 14-17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Bauer et al. in view of Izumi et al., further in view of U.S. Pat. No. 3,620,149 to Ogihara. Applicant traverses this rejection.

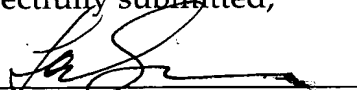
Claims 14-17 depend from claim 1, which is patentable over the references to Bauer et al. and Izumi et al. The Ogihara reference does not cure the deficiencies of the references to Bauer et al. and Izumi et al.

The reference to Ogihara has been cited as providing a threaded retaining ring. The Ogihara reference discloses a threaded coupling for mounting a lens barrel to a film camera body. The Ogihara reference does not disclose or suggest a cover for an image sensor array. Further, the Ogihara reference does not disclose or suggest "a plate formed of substantially transparent material and secured adjacent to an upper surface of and covering the image sensor array, said sensor array being sealed by said plate, said plate having a plurality of surfaces forming a lensing structure, such that at least one of said plurality of surfaces is contoured into a lensing surface capable of changing imaging characteristics." Ogihara further contains no disclosure of "a mounting structure extending from an upper surface of the plate and adapted to secure a prefabricated lens system to the plate above the lensing structure." Claims 14-17 are patentable over the cited references to Bauer et al., Izumi et al., and Ogihara.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

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